PROCEEDINGS OF THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON

SERIES C. JOURNAL OF MEETINGS

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ORDINARY MEETING

WEDNESDAY, 5TH JULY, 1950, at 5.30 p.m.

AGENDA

1. Confirmation of the Proceedings of the Ordinary Meeting held on 7th June, 1950.

2. Recommendations of candidates for Fellowship.

3. Announcement of election of new Fellows.

4. Additions to the Library.

Presented.

Allee, W. C., *and others. Principles of animal ecology.* 8vo. Philadelphia and London. 1949. [The Publishers.]
Chu, H. F. *How to know the immature insects.* [Pictured-Key Nature Series.] 8vo. Dubuque, Iowa. 1949. [The Publishers.]
Jannone, Guiseppe. *Vita di Scienziato.* (*Biografia di Filippo Silvestri*). 8vo. Genova. 1950. [Dr. B. P. Uvarov, F.R.S.]
Glen, Robert. *Larvae of Elaterid Beetles of the tribe Lepturoidini.* 8vo. Washington. 1950. [Smithsonian Miscellaneous Collections, Vol. 111, No. 11.] [The Smithsonian Institution.]

Purchased.

Brohmer, P., *and others. Die Tierwelt Mitteleuropas.*
Band IV. Lief. 1 (b) [Ephemeroptera and Odonata].
Band IV. Lief. 3 [Anoplura, Rhynchota, Heteroptera and Homoptera].
Band V. Lief. 1 [Hymenoptera].
Band VI. Lief. 1, 2, 3 [Neuroptera, Trichoptera, Diptera, Aphaniptera and Lepidoptera].
8vo. Leipzig. [1927–36.]
Hoffmeyer, Skat. *De Danske Ugler.* 8vo. Aarhus. 1949.
Neave, Sheffield Airey, *editor. Nomenclator Zoologicus.* Vol. 5. 1936–1945. 8vo. London. 1950.
Wesenberg-Lund, C. *Biologie der Süsswasserinsekten.* 8vo. Kopenhagen. 1943.
Wörndle, Alois. *Die Käfer von Nordtirol.* 8vo. Innsbruck. 1950.

In addition, separates were presented by Professor J. Chester Bradley; Mr. Curtis W. Sabrosky; East Malling Research Station; The Trustees of the British Museum; United States Department of Agriculture; The Smithsonian Institution; Lt.-Cdr. Kenneth L. Knight and Mr. P. F. Mattingly; Mr. R. G. Davies; Council for Scientific and Industrial Research, Commonwealth of Australia; Mr. E. P. Wiltshire; Mr. Harold E. Box; Miss Dorothy J. Jackson; Rothamsted Experimental Station; Dr. H. Cleu; Director, East African Tsetse and Trypanosomiasis Research and Reclamation Organization; and Chief Entomologist, East African Tsetse Research Organization, Shinyanga.

5. Admission of Fellows.

6. Exhibits.

Fellows are particularly requested to bring suitable exhibits to the Meeting even though it may not be possible to announce their intention to do so beforehand.

> *Note.*—To avoid congestion in the Library and to enable exhibits to be displayed to greater advantage, a table has been placed in the meeting-room for this purpose. Fellows are asked to place their exhibits on this table, with a suitable explanatory note, as soon as possible on the afternoon of the meeting, so that they are available for inspection there before the meeting opens.

7. Communications.

Dr. Hugh Scott, F.R.S.

Journey to the Gughé Highlands (Southern Ethiopia), 1948–9.

[Abstract]

The mountains of central Abyssinia, rising from the plateaux at 6,000 to 8,000 ft., to heights from 10,000 to over 13,000 ft., are inhabited by restricted associations of species. Some appear to be relicts of ancient faunas dating from times of cooler and moister climate. From ancestral forms, isolated in the high massifs by the increasing heat and dryness at lower altitudes, have arisen descendant species, many of which are confined to a single massif. Other high-mountain species have perhaps originated more recently from forms in the surrounding lower country. Discoveries made in 1926 on Mt. Zukwala (9,900 ft.) and Mt. Chillalo (13,200 ft.) have been followed in 1948 by explorations on Mt. Damota (10,400 ft.), north-west of Lake Abaya (Margherita), and on Mts. Tola and Gughé in the highlands (believed to exceed 13,700 ft.) immediately west of the lake, establishing links with the peculiar faunas of the high East African mountains.

Not even the topography of the Gughé Highlands has been fully described. The slides will illustrate the countryside and people, and the agriculture and occupations of the latter, from an altitude of about 4,000 ft. to the highest zone of cultivation. just below the mountain-tops covered with bush-heath and alchemillas. Neatly fenced woods of tall bamboos are remnants of the vanished forests. The southern slopes have been less deforested, while east of Lakes Abaya and Chamo, in Sidamo Province, extensive coniferous (*Podocarpus*) forests were traversed.

The closely segregated peoples include Cushite groups in the formerly independent territories composing the Provinces of Wolamo and Gamo, and Nilotic negroes south and south-east of Lake Chamo; these groups speak languages unknown to many Ethiopians.

TEA will be served in the Library before the meeting.

A card index of Fellows' addresses arranged **on a geographical basis** is now available for the use of Fellows in the Society's Rooms. Addresses in Great Britain are grouped under counties; elsewhere under Dominions, Colonies, Foreign States, etc.

ADMISSION OF FELLOWS

Any Fellow who has not been formally admitted to the Society under Chapter XIV, Section 4 of the Bye-laws and attends the meeting on 5th July, 1950, is requested to inform the Secretary before 5.15 p.m. on that date.

PROCEEDINGS OF THE ORDINARY MEETING HELD ON 7TH JUNE, 1950.

Dr. V. B. Wigglesworth, F.R.S., President, in the Chair.

Present, 76 Fellows and 25 Visitors.

The Minutes of the Ordinary Meeting held on 3rd May, 1950, were confirmed and signed by the President, subject to a correction in the spelling of the name of Professor H. C. Sen.

The names of the following candidates for election were read for the first time: H. E. Chipperfield, S. Hussain Hazarika, M.Sc., M.S., D. B. Lindsey, F. H. Lyon, J. E. A. Orian, A.C.R., and Miss Z. Waloff, M.Sc.

For the second time (taken as read): H. G. Allcard, Shri J. C. B. Choudhuri, M.Sc., Professor John Lane, and W. Peters, M.B., B.Sc., M.R.C.S., L.R.C.P.

The Secretary read the names of the following newly elected Fellows of the Society: Miss B. Kemp, Mozzell's Wood, Lane End, near High Wycombe, Bucks; Dr. A. Malac, 113th (C) G.H. Concord, Sydney, Australia; J. Y. Moggridge, Tsetse Control Dept., P.O. Box 141, Kampala, Uganda; J. A. Parry, Cavendish, North Holmes Road, Canterbury; Abdul Haq Qureshi, B.Sc., Assistant Entomologist, Fruit Experiment Station, Quetta, Pakistan; I. H. Welsh, J.P., Staff Quarters, Mt. Beauty, *via* Wadonga, Victoria, Australia; E. C. Zimmerman, Experiment Station, Hawaiian Sugar Planters' Association, Honolulu, 17, Hawaii, U.S.A.

Thanks were voted to donors of gifts to the Library since the last meeting.

The President announced that the IXth International Congress of Entomology would be held in Amsterdam from 17th–24th August, 1951. Copies of a leaflet giving preliminary details were available in the Library.

He also called attention to the fact that the date of the Annual Exhibition by the Amateur Entomologists' Society had been changed to Saturday, 24th June.

Mr. J. I. Alfrey, Dr. K. L. Boratynski, Surgeon-Capt. G. H. Bulow, Mr. F. Hewson, Dr. W. F. Jepson, Major F. L. Johnson and Mr. E. C. Zimmerman signed the Obligation Book and were admitted Fellows of the Society.

Dr. C. B. Williams exhibited a specimen of *Raphia frater* Grote, a Noctuid moth common in the Eastern half of North America, which had been caught in a light trap at Rothamsted on 3rd July, 1949. He said this was the first time this species had been recorded in Europe and he was unable to suggest how it was likely to have arrived.

Mr. C. F. Rivers exhibited a freshly emerged female of the Saturniid moth *Graellsia isabelae* and its cocoon.

Mr. T. Spence exhibited living bred specimens of *Hypoderma bovis* and mentioned that although this warble fly was so common it was rarely seen alive. Larvae were obtained by fixing ointment boxes with top and bottom suitably adjusted on to the warble ulcers. The larvae then pupated almost immediately and were kept alive in dampened peat moss. In reply to an enquiry by Professor Buxton, Mr. Spence said the period of survival of the flies in captivity was about two weeks if kept in the dark, but in a light cage when they were active they usually died within two days.

Mr. R. L. E. Ford exhibited part of an extensive series of hymenopterous parasites bred from the Tortricid moth *Peronea hastiana* from the sand dunes at Kenfig, Glamorgan. The specimens resulted from collections made to obtain an undescribed species of *Microgaster* (Species A). About nine-tenths of another species (Species C) died as unformed pupae inside the cocoon, as the result of attack by a fungus, this estimate being based on several hundred cocoons extracted from the food plant. A great number must still have remained amongst the leaves, and allowing for these the proportion of parasites to moths which emerged was still only 33 per cent.

As announced on p. 22, Professor Buxton showed three films of entomological interest taken in Africa.

In the subsequent discussion on the tsetse fly film the President enquired about the part played by antrycide in modern control methods, to which Professor Buxton replied that it was the most effective curative yet known for trypanosome diseases of cattle. As a prophylactic it gave protection for many months if scientifically applied by trained staff with veterinary knowledge, but when carelessly handled large numbers of cattle often did not receive the full dose owing to spilling from the syringe, so that a strain of trypanosomes developed that was resistant to this drug. It had not yet superseded other control methods. An adequate dose when wearing off might also produce trypanosomes resistant to it, but it was undoubtedly valuable for certain limited purposes, such as walking cattle to market through a fly belt prior to slaughtering.

Major F. L. Johnson said that in his experience the occurrence of tsetse was definitely associated with the presence of thicket. Hence the absence of flies from Togoland was due, he thought, to the native practice of burning the bush up to 2000 ft. at the end of the dry season. The fly was widespread in the Belgian Congo, where there were large areas of thicket, but in the Accra plains of the Gold Coast, where there were no small thickets, the fly did not occur.

Dr. J. Ford suggested, on the basis of his observations in Ankole, that tsetse country there could be distinguished better by the form or pattern of the vegetation than by the species of trees and bushes that composed it. The fly tended to occur where there was a double canopy of vegetation, that is, trees with smooth trunks and a crown occurring with an undergrowth of thicket, either alone not harbouring the fly.

In the discussion of the film illustrating the problem of *Simulium damnosum* and *Onchocerca* infection, Mr. D. J. Lewis said that the infection rate among *Simulium* flies where the film was taken was 40 per cent. Ten per cent of the flies had larvae in their heads, each one so infected having an average of three worms. Near the river 20 flies were biting man every 15 minutes. In the light of this each fisherman might expect one infected bite every three minutes, so that it was hard to understand why onchocercal blindness was not an even greater problem.

Mr. Frank Wilson gave a talk on the entomological control of weeds. He summarized the work done in Australia, the results obtained there, and the general principles on which Australia based such work.

He said that of the three problems investigated fairly fully, prickly pear had been a success, St. John's wort promised to be successful, and Noogoora burr had been a failure. Three other problems had been worked on less thoroughly. *Lantana* had been partly controlled in Queensland, whilst in Norfolk Is. very good results seemed to have been obtained. No result had been obtained with Ragwort, and no obvious good had been obtained with gorse. However, much work remained to be done with these problems.

He emphasized the importance of the natural distribution of insect species attacking a weed as a guide to those suitable for introduction into new countries.

The President referred to the risk of damage to plants of economic importance, and quoted the experience encountered in S. Africa, where prickly pear had been successfully controlled, but the control had now attacked the spineless pear, which provided valuable cattle food.

Dr. Zimmerman said there was a strong difference of opinion on the *Opuntia* problem in Hawaii. In the drier regions the water in these plants alone enabled cattle to survive drought, though suffering from sore and swollen mouths. He also said that a Trypetid gall-fly had been successfully introduced to control the noxious weed *Eupatorium*, which it had eliminated in places, and the previously infected areas were now restored to grazing.

Mr. R. A. Lever said that the lace bug *Telionemia* had been used with success to control *Lantana* in Hawaii, but the results in Fiji had been disappointing. He wondered if the successful use of the parasite was dependent on a climatic factor, and Mr. Wilson said that in Australia this bug was generally more effective in the warmer regions.

Mr. Wilson then reverted to the President's earlier reference to the prickly pear problem in S. Africa. It was the entomologist's task to indicate the probable value of an insect and its host specificity. He must be responsible for any unforeseen economic damage caused. But the decision to make insect introductions when it was known that the insect would also attack plants of economic value, or when the weed itself had some economic value at particular times or places, must remain the responsibility not of the entomologist, but of the appropriate agricultural authority. Dr. Easton said that on a recent visit to the Canary Islands he had found *Heliotropium* heavily infested with a subspecies of *Meligethes viridescens.*

N. D. RILEY, *Honorary Secretary.*

The next meeting will be held on 6th September, at 5.30 p.m.

Notice.—Fellows holding copies of the following publications and no longer needing them are invited to return them to the Registrar. Full published price will be paid for good clean copies.

Transactions.—Vol. 85, Part 1 ; Vol. 89, Part 10.
Proceedings B.—Vol. 11, Part 2 ; Vol. 15, Parts 1 and 2.
Proceedings C.—Vols 10 and 13, complete.

NOTICES

In addition to the *Transactions* and *Proceedings* (Series A, B and C), the following publications are available on application at the Society's rooms :—

The Generic Names of British Insects, with Check Lists of the Species, prepared by the Committee on Generic Nomenclature of the Royal Entomological Society of London, with the assistance of the Department of Entomology of the British Museum (Natural History) :—

Part 1.	Recommendations relating to the publication of the Committee's Reports	Price 6*d*.
,, 2.	Rhopalocera	,, 3*s*. 6*d*.
,, 3.	Odonata	,, 3*s*. 6*d*.
,, 4.	Neuroptera	,, 3*s*. 6*d*.
,, 5.	Hymenoptera	,, 15*s*. 0*d*.
,, 6.	Coleoptera Carabidae	,, 10*s*. 0*d*.
,, 7.	Coleoptera Hydradephaga	,, 5*s*. 0*d*.
,, 8.	Hemiptera Heteroptera	,, 39*s*. 0*d*.
,, 9.	Coleoptera Staphylinidae	,, 40*s*. 0*d*.

HANDBOOKS FOR THE IDENTIFICATION OF BRITISH INSECTS.

The Society has undertaken the issue of a series of publications intended to provide illustrated Keys to the whole of the British Insect Fauna so far as this is possible.

It is proposed to cover this field in a series of ten volumes, arranged as follows :—

I. Part 1. General Introduction.
,, 2. Thysanura.
,, 3. Protura.
,, 4. Collembola.*
,, 5. Dermaptera and Orthoptera.†
,, 6. Plecoptera.†
,, 7. Psocoptera.*
,, 8. Anoplura.
Part 9. Ephemeroptera.†
,, 10. Odonata.†
,, 11. Thysanoptera.*
,, 12. Neuroptera.
,, 13. Mecoptera.
,, 14. Trichoptera.
,, 15. Strepsiptera.
,, 16. Siphonaptera.
II. Hemiptera.* III. Lepidoptera. IV and V. Coleoptera.*
VI. Hymenoptera : Symphyta* and Aculeata.*
VII. Hymenoptera : Ichneumonoidea.*
VIII. Hymenoptera : Cynipoidea, Chalcidoidea and Serphoidea.
IX. Diptera : Nematocera† and Brachycera. X. Diptera : Cyclorrhapha.*

The following parts are now available :—

Vol. I, Part 5. Dermaptera and Orthoptera. By W. D. Hincks. Price 3*s*. 6*d*. plus postage.
Vol. I, Part 6. Plecoptera. By D. E. Kimmins. Price 3*s*. 6*d*. plus postage.
Vol. I, Part 9. Ephemeroptera. By D. E. Kimmins. Price 3*s*. 6*d*. plus postage.
Vol. I, Part 10. Odonata. By F. C. Fraser. Price 7*s*. 6*d*. plus postage.
Vol. IX, Part 1. Diptera : Introduction and Key to Families. By H. Oldroyd. Price 7*s*. 6*d*. plus postage.
Vol. IX, Part 2. Diptera, Nematocera : Families Tipulidae to Chironomidae. By R. L. Coe, Paul Freeman and P. F. Mattingly. Price 20*s*. 0*d*. plus postage.

Parts marked † are on sale or in the press, those marked * in preparation.

Orders for the complete series or for separate parts can be placed with the Registrar at the Society's rooms now, but prices can only be quoted for those parts already issued.

Fellows of the Society may purchase one copy at a discount of 25 per cent. ; additional copies at the full published price.

Stylops, a Journal of Taxonomic Entomology.
1932–1935. Vols. 1–4 (all issued). Price £1 16*s*. 0*d*. each ; to Fellows £1 7*s*. 0*d*.

Abstract of Proceedings of the Royal Entomological Society of London. 1935. Nos. 1–6 (all issued). 3*s*. 0*d*.

Hubner : a bibliographical and systematic account of the entomological works of Jacob Hubner and the Supplements thereto. In 2 vols. By Francis Hemming. Price Vol. 1. 605 pp. £1 15*s*. 0*d*.; Vol. 2. 275 pp. 15*s*. 0*d*.

The History of the Entomological Society of London, 1833–1933. By S. A. Neave, assisted by F. J. Griffin. Price 10*s*. 6*d*.

Published by The Royal Entomological Society of London *and sold at its rooms,* 41, *Queen's Gate, S.W.* 7, *price* 6*d*.

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